

PASTEURIZATION MAKES MILK SAFER

Declares Bulletin Issued by the United States Department of Agriculture.

WASHINGTON, D. C., April 1.—That there is no valid objection to pasteurization when properly performed and that the process makes safer even the most carefully handled and inspected milk, is the conclusion of a new professional paper of the department of agriculture, in which are set forth the most recent conclusions of scientists in regard to this matter. It seems probable, says this paper, that the milk of the next year, a large proportion of the milk supply in the large cities will be pasteurized. There is already a marked tendency in this direction. About ten years ago only about five per cent of the milk supply of New York was pasteurized. In 1914 eighty-eight per cent was treated in this way. At the present time eighty per cent of the milk supply of Boston is pasteurized, and there are corresponding increases in many of the smaller cities.

Practiced in Secret.

Before the value of pasteurization as a hygienic measure was as well recognized as it is today, it was practiced in secret by a number of milk dealers as a means of preserving milk and preventing it from souring. Its commercial value in this respect is undoubtedly great, but its chief function is the destruction of disease-producing organisms. Proper pasteurization should destroy about ninety per cent of all the bacteria in the milk, although when the bacteria count of the raw milk is low the production may be somewhat smaller. The efficiency of the process, it is pointed out, can not be based on the per cent, but rather in the character of the bacteria destroyed.

The kinds of bacteria that remain alive after pasteurization depend on the temperature to which the milk is heated and the species of bacteria which are in the milk. These processes of pasteurization, known respectively as the flash process, the holder process, and pasteurization in the bottle, are now practiced in this country. In the flash process the milk is raised quickly to a temperature of about 160 degrees F. or more, held there for from thirty seconds to a minute, and then cooled quickly. In the holder process the milk is heated to a temperature of from 140 degrees to 150 degrees F. and held there for half an hour. When pasteurization in bottles is practiced, the raw milk is put into bottles with water tight seal caps, which are immersed in hot water and held for from twenty to thirty minutes at a temperature of 145 degrees F. In this way the pasteurized milk is not subject to any danger of reinfection. On the other hand, the seal caps must be absolutely tight and this involves increased cost. In general, it may be said that the holder process is coming into greater favor than either of the others. This process permits of the use of

Lower Temperatures
which, for various reasons, is highly desirable. Another method of pasteurization, or rather modification of the present holder process, suggested by the department investigators, is that of bottling hot pasteurized milk. The process consists of pasteurizing milk by the holder process at 145 degrees F. for thirty minutes, then bottling it while hot in hot bottles steamed for two minutes immediately before filling. After filling, the bottles are capped and may be cooled by any of the systems in which the caps are protected. The bottles are sprayed with water or cooled by forced air circulation.

When milk is held at 145 degrees F. for thirty minutes, all the disease-producing bacteria, so far as can be ascertained, are completely destroyed. At the same time a larger percentage of the bacteria that cause milk to sour and a smaller percentage of those that cause it to rot are left than when a higher temperature is employed. Pasteurized at a low temperature, milk undergoes no change which affects its nutritive value or its digestibility. Subjected to a temperature of 150 degrees F. or more, however, does result in certain chemical changes. Finally, pasteurization at low temperature is more economical because the expense of heating and cooling is less.

Performed Improperly.
This, of course, does not mean that insufficient pasteurization should ever be tolerated. As a matter of fact, the process of pasteurization is frequently performed improperly. For the holder process, 140 degrees F. is the point at which investigations have shown that disease-producing bacteria are killed, but in practice it is advisable to use a temperature several degrees above this minimum of safety. When the flash process is used, investigation has shown that very many dealers fail to heat the milk to a sufficiently high temperature. This appears to be another argument for the use of the holder process, although conditions in this respect are said to have been improved greatly in recent years.

Another common defect in the process of pasteurization is carelessness in the handling of the milk after it has been treated. As has been said already, this is one reason why pasteurization in bottles is advocated. One false step in handling the milk after it has been pasteurized will undo all the good effects of the process. The milk should be cooled as rapidly as possible to about 40 degrees F. and kept at that temperature until delivered. If this is done, there is only slight bacterial increase during the first twenty-four hours. It has been held by some investigators that bacteria grow faster in pasteurized milk than in raw milk. This point, however, has never been thoroughly established and other investigations indicate that the rate of increase is approximately the same.

Another Objection.

Another objection that has been

Drug Victims Get Their "Dope" Delivered in Hollow Necktie, Cigarettes and Even Perfume

HOUSTON, Tex., April 1.—Methods by which men and women of restricted intellect obtain opium, cocaine, morphine and other narcotics in violation of the Harrison act, were revealed when the case of C. S. Mallard, formerly manager of a drug store, was put on trial before Judge Walter T. Burns in the federal court here.

Records of the drug store, situated on the border line of the restricted district, show that in a period of a little over two months, after the law went into effect there had been filled there 1,651 prescriptions of which 1,528 were for narcotics.

In many instances federal officers on tracing down the prescriptions found that the addresses given in them were vacant lots, or that there was no such party as that named in the prescription residing at the address given.

Hugh H. Manning, colored, who worked at the drug store, told of the various schemes to conceal the sale and delivery of "dope."

Routes to Evade Officers.
A customer, he said, would call up and ask to have some "cigarettes" sent over. A package supposed to contain cigarettes, but which in reality contained morphine, and the charges on which were fifty cents, would be sent.

Again at another time, he said, a man came into the store and asked for "Lake Forest" perfume. He told the man that they had none in stock, but he said, Mallard came up, and after pouring a little perfume in the bottle, filled it with a morphine prescription.

At another time, he said, when he had complained of being afraid to deliver packages of narcotics to houses in the restricted district because of the police, "they" bought him a wide tie with a hollow center and when he was to deliver a package he would put the "dope" in the tie and take it to its destination.

Doctors Tell of the Effect.
Drs. P. R. Denman and E. M. Armstrong were put on the stand by the prosecution and were asked to describe the effects of various narcotics on the habitual user.

"How does a drug effect the physical, mental and nervous processes of a man?" asked Assistant District Attorney E. S. Phelps, of Dr. Denman.

"Well," replied Dr. Denman, "when a drug gets a hold of a man, unintentionally and without any desire on his part, he will develop a craving and the only thing that will satisfy this desire is the particular drug to which he has become addicted. More and more of it is required every day to satisfy his craving."

"This goes along for a variable period of time, according to the physical condition of the individual, and finally, when he begins to take it in large quantities, it will affect his physical well being and his mentality."

"That is also a gradual process. Finally the drug will reduce an individual to total incompetency."

"What is the ratio of insanity produced by drugs?" asked Mr. Phelps.

"At least thirty or forty per cent," replied Dr. Denman.

Three indictments had been returned by the grand jury against Mallard, Dr. John T. Rather and Mrs. V. G. Boyd.

Accused Doctor Explains.
When the cases were called in the federal court, Dr. Rather pleaded guilty, and the case against Mrs. Boyd was dismissed by District Attorney Green, largely owing to the fact that she is the mother of a 3 weeks old baby. Mallard alone entered a plea of not guilty, and his trial was undertaken at once. When Dr. Rather was arraigned he was much broken.

"Guilty or not guilty?" asked Judge Burns, as Dr. Rather came before the bar.

"Guilty," answered Dr. Rather.

"All over or just in spots?" asked the court.

The defendant did not understand, and the court stated his question in another form. "Are you much guilty or little guilty," he asked.

"Little guilty, I guess," answered Dr. Rather.

"Well, doctor," asked the court, "what do you think we ought to do with you? Do you want us to give you an alibi?"

Cases Dismissed by Judge.
"Yes," said Dr. Rather, but he hastily corrected himself.

"I'd prefer a homeopathic dose, your honor," he said.

"You don't think that that would hurt you much?" asked the court.

"No," answered Dr. Rather.

"He's old, is he, doctor?" Judge Burns then asked.

"Sixty-six," was the reply.

"What do you think the court ought to do with you?" asked the court.

"I think I ought to be a free man," answered Dr. Rather. "I have never done it since this trouble first came up."

"What do you suggest, Mr. Boodley?" asked the court.

"I have given some thought to this case," answered Mr. Green. "This defendant, who claimed to be suffering from asthma, has indicted with him two co-defendants, one of whom, Mrs. V. G. Boyd, just became the mother of a baby three weeks ago. I have come to the conclusion to dismiss the case against the doctor, also."

This was done. Mallard's case went over.

once to these formidable ships, although it is officially definite they were completed at the times stated, and must now be somewhere afloat with their formidable fifteen inch batteries. These ships were not primarily the ones under discussion in the recent debate, as they are completed, but the Queen Elizabeth was referred to as the type of later ships around which the debate really centered.

Two more capital ships of the Queen Elizabeth class were provided in the 1914 estimates, namely, the Agincourt and the Renown; and two more of the royal sovereign class, with slightly less tonnage, namely, the Revenge and the Resistance. The first two were to be of 27,500 tons, the others of 25,750 tons. All were to have fifteen inch main batteries with twelve to sixteen six-inch guns, anti-air guns, etc. The Agincourt was to be built at Portsmouth, the Renown at Fairfield, the Revenge at the Palmer yard, and the Resistance at Davenport. These were part of the ships under discussion in the debate. Except for the foregoing known information as to their authorization, size, power, etc., nothing more is known of them, officially or otherwise, and quite properly as a matter of necessary reserve. All that is known is that the Agincourt and its big sister ships were provided for, but no further reference has ever been made to them.

Five more big new dreadnoughts were provided in 1914, namely, the Royal Sovereign, Royal Oak, Resolution, Ramillies and Revenge. These have since become known as the "Royal Sovereign Class." The capital ships were to be of 27,500 tons, with eight or ten fifteen-inch main guns and twelve six-inch. The first two, the Royal Sovereign and the Royal Oak, were actually completed, the first at Portsmouth, in December, 1915, and the Royal Oak at Davenport at the same time. The Resolution, Ramillies and Revenge, were, according to the last information permitted in Jayne's summary, building at Palmer, Beardmore and Vickers yards, and to be completed in 1916. Beyond this nothing is known of the ships of this class, except that the Royal Sovereign and Royal Oak were completed and are now afloat somewhere with their fifteen inch guns.

The foregoing are the ships around which the recent debate centered, and details of which ships there is complete silence except on the known facts before given. The rare references to the ships of the grand fleet usually mention ships of an earlier date, such as the Lion, completed in 1910, the Royal Princess in 1911, the Queen Mary in 1913, and the Tiger and Iron Duke of 1914. Admiral Sir John Jellicoe, in command of the fleet, dated a recent letter to the Times from on board the Iron Duke, and this and the Lion and Tiger are frequently referred to. But it is over the later ships of the Agincourt, Queen Elizabeth and Royal Sovereign class that the veil of complete silence is drawn except for the foregoing known details.

Without adding details on the progress or completion of the foregoing ships, Mr. Balfour in his recent speech declared generally that "The fleets are much stronger than they were six

ONCE CARED FOR EMPRESS, NOW LIVERYMAN

Denies That Wife of Napoleon Fled Under Protection of American Dentist.

SMITHVILLE, Mo., April 1.—Running a livery here, lives Henry Fuller, who knew royalty once upon a time. The Empress Eugenie, who will be 90 years old soon, employed Henry Fuller for seven years, and he can tell you things not in the history books, besides denying some of those that are.

You cannot persuade him, for instance, that when the exiled empress fled from Paris it was under the guidance and protection of an American dentist, Dr. Thomas W. Evans, that she reached the coast of France and was enabled to embark for England.

But it doesn't comport with his cockney sense of what is dignified and fitting for an empress. Anyhow, he won't believe it. Simply isn't so.

"Hit isn't reasonable," says Mr. Fuller with dignity and finality. "Over would she 'ave brought the amount of jewels and gold plate with her that she did if she had run off in a 'ack and a dentist? Habsurd!"

Henry Fuller has a cockney accent which is quaintly exotic in Smithville. He sat in the little office of the livery stable and his wife run here, twirling his feet upon the stove and twisting a brown muffler around his neck. And he talked as one who has seen men and affairs. He talked of "the hemps" and "Napoleon—he didn't think much of Napoleon. Nor the son, the prince imperial, who died in the British army in Africa."

Career at Chislehurst.
Fuller was taking care of Camden Place in Chislehurst, sixteen miles outside of London, when the royal exile came to England in the fall of 1870. Camden Place, a country estate, was under lease to Edward McMorland, Fuller's employer. McMorland was a silk merchant—at No. 32 St. Paul's Churchyard, London, E. C., and is there yet—and he had made a great deal of money through the court of France.

Eugenie was the leader of the world's fashions in her ruling days, and to have her take up a new fabric or new color meant a great sale for it. Worth gowns and McMorland suits had been a favorite combination with her. McMorland was ready to do anything for her.

"I'd met the empress in 1868, when I was in Paris with Mr. McMorland showing some fancy poultry," says Henry Fuller.

"In the summer of 1870, I mind, Mr. McMorland had bought a couple of St. Bernard dogs to give to the empress, and when he was down at Chislehurst a few weeks before," says, "We'll need to be taking them dogs to Paris to her. Maybe she'll be coming 'ere to take care of them. Two weeks before she came I had notice, and I got the painters to work. It will have been late September when she came, for it was harvest time. I sent a man named Tommy Mitchell out into the fields to hire teams from the farms to bring up their luggage and boxes, and whatever he paid, I don't know. A goodish bit."

McMorland had turned the place over to the royal exile, according to his one time employee, because it was the only way they could get a house in Chislehurst.

"It was a strong Protestant community," Fuller explains, "and being Catholic, the visitor couldn't lease nor buy."

"She was a tall, fine woman, and straight as a rush," Fuller said reflectively after a while, reverting to the empress.

There was great excitement in Chislehurst over the coming of royalty, and many wild stories were told of the empress. There was even some talk of precautions against the food of the royal party being poisoned, but Fuller, who was in charge of it all, declares he never saw any.

Worried about Throne a While.
Did the empress seem much cut up over the loss of her throne? Well, for a while, but if you ask Fuller about it, he believes she and her son were worse worried for fear there'd be trouble over the amount of riches they'd take out of France. As an illustration of imperial lavishness, Fuller tells you they killed 100 chickens just for their livings, and give the carcasses away.

"Twelve years ago," Fuller says, "when I was back in England, I went to see the Empress Eugenie at Farnborough Hill. She wasn't there the first time I went, but I was there three months and I went again. I found 'er and she showed me through the chapel she's built at Farnborough herself. She showed me Napoleon's tomb and her son's. The carved marble work is very fine. I doubt if you'll see its equal this side of Rome or France, maybe."

"Fuller," she says, "I travel a great deal, it is so lonely here, Mme. Lebreton is dead, you know, and all them that she knew that came over with 'er. She told me she 'adn't any friends left, any confidants. You see, she's close on ninety."

CARELESS MAILING.

WASHINGTON, April 1.—Reports continue to reach the department of commerce from consular officials abroad that business men of the United States exercise little care in mailing letters and catalogues to foreign buyers and customers. The principal complaint is that American domestic postage rates are applied to the foreign recipients have to pay not only the domestic postage but a penalty as well. Improper addressing of letters also is frequent.

months ago. They are still stronger than they were twelve months ago, and their excess over what we possessed nineteen months ago is still greater."

Plans for School Gardens

WASHINGTON, April 1.—Specialists in the United States Department of Agriculture have planned two specimen individual gardens five by sixteen and one-half feet for use in schools. One of these is for vegetables alone and the other for both vegetables and flowers. The average pupil, it has been found, shows a much keener interest in a garden of his own than in one owned in common by all the school. Individual gardens stimulate pride in ownership and the work of caring for them encourages system, skill and judgment. Participation in the care of a community garden does not develop the idea of individual responsibility and consequently interest and industry are usually lacking.

The limited area usually available for school garden work makes it imperative that tall-growing, broad-leaved, and climbing plants must be excluded. Radishes, lettuce, beans, beets, tomatoes, and other plants which grow in a compact bush form are recommended for school garden work.

First Plan.
In the first plan recommended by the government specialists, the rows run the short way of the garden, and with the exception of tomatoes are all a foot apart. Tomatoes are planted eighteen to twenty inches apart, thus giving more room for the plants to spread than would otherwise be secured. In order to make the fullest use of the area a rotation of crops has been arranged. In the accompanying diagram it will be noted that the quick maturing crops are planted in groups, which provides a considerable area for replanting as the crops mature. A bracket encloses the names of such crops, and those which are to follow are indicated by the names outside the bracket.

The second garden is of the same area as the vegetable garden. The rows are one foot apart, with the exception of radishes, which are six inches. The plants are grouped according to height of growth so as to place the tall growing plants in the center of the garden, with low growing plants at the end. In this case it will be noted that tomatoes are used only as a succession or rotation crop following radishes and lettuce.

The children should be allowed to do all the work of preparing the land as well as planting the seed and caring for the plants. This can be accomplished by instruction in soil physics, the teacher explaining the reason for each step. The methods of planting and cultivating the vegetables in the garden are described in Farmers' Bulletin 218 in part as follows:

Radishes.—The seeds should be sown in drills, in rich, well prepared soil, placed about half an inch apart and buried not deeper than one inch. When the plants are showing the second set of true leaves they should be thinned to stand from one to two inches apart in the row.

Lettuce.—The seeds should be sown in drills in the open or in boxes in the window. If in the open, the seeds should be scattered about one-half inch apart along the row, and covered not more than one-half inch with earth. Firm the earth well over the seeds, so as to bring the moist soil in contact with them. When the plants are well up, thin to six inches apart in the row. If the seeds were sown in a window box, transplant the young plants two by two inches apart as soon as the first true leaves appear. When they begin to crowd in their new positions, shift them to four inch pots or to tin cans in which canned vegetables have been received. If tin cans are used, a convenient method is to melt the top and bottom off, which will usually also unseal the seam at the side. By tying a string around the rim thus formed and placing a shingle under the can it can be filled with soil and the young plant placed in this respect. Keep the plants growing slowly until about May 20 to June 1, when it will be safe to place them in their permanent locations in the garden. Set the plants in rows eighteen inches apart and place the plants about twenty inches apart in the rows, as indicated by crosses on the diagram, Figure one. Each plant as it grows should have all side branches removed and the main stem tied to a stout stake, about five feet tall and at least an inch square, driven firmly in the ground.

Flowering plants which are especially recommended to amateur school gardeners are the ageratum, nasturtium, petunia, the California poppy, and the zinnia. Culture instructions for these plants, may also be obtained from Farmers' Bulletin 218, which will be sent on request.

CIVILIAN FLYERS HOPE TO MOBILIZE

Soon on a 640-Acre Field Offered Free to Aviation Service by Chicago.

ST. LOUIS, Mo., April 1.—Albert Bond Lambert, of St. Louis, head of the United States aviation reserve, who has offered the co-operation of the organization to the war department for service in Mexico, hopes to see the mobilization soon of civilian flyers on a 640-acre field here, offered free to the government by Chicago.

Immediately after the Mexican expedition was projected Mr. Lambert telegraphed to Senator Stone of Missouri recommending that a bill to call out the reserve corps of flyers and appropriating \$100,000 for mobilization be introduced in Congress. The war department is powerless to take action in the matter without the sanction of Congress.

"Our actions are not in anticipation of war," Mr. Lambert said, "but for protection of the troops now on the Mexican border. The army should have at least one aeroplane for every 200 men. The present aim is to get Congress to call for the mobilization of the reserve corps to Chicago, where a field of 640 acres has been offered free to the government for this purpose. From the Chicago camp, the army field at San Antonio would be supplied. This concentration would offer the army its choice of men for first line work."

Mr. Lambert declared that aeroplane exports to Europe average about \$25,000 a week, or about sixty-five machines. "In case of more serious difficulty with Mexico," he said, "the government probably would be compelled to hold up these shipments for its own use."

Aeroplanes are useless, however, without men who understand them. This lack of preparedness in army aeronautics is illustrated in the national guard. Only two states, New York and Rhode Island, have given aviation service any attention.

"When we suggest that an officer of the militia be detailed to an aviation school, we are told that the laws of the state do not provide for such a move, and that it is necessary to wait for volunteers. The militia, if called out, would be almost entirely without protection, unless some arrangement is made by which the civilian reserve corps can be utilized."

A single nest of the Australian bush turkey has been found to weigh five tons.

British, Guiana gold mines last year produced 60,733 ounces of gold.

Switzerland spends more on relief of poor than does any other country.

BOUGHNUT HOLE INVENTED BY SEAMAN

"Old Salt" Tells How Discovery Was Made and Stomach of Earth Saved.

BOSTON, April 1.—The man who invented the hole in the doughnut has been found. He is Captain Hanson Gregory, at present an inmate in Sailors' Snug Harbor at Quincy, Mass. Doughnut cutters have made fortunes for men; millions eat doughnuts for breakfast and feel satisfied. Doctors do not assail the doughnut. And all of this owes its being to Captain Gregory, who made the doughnut a safe, sane and hygienic food.

It's a long story, mates; but as the 85-year-old chap relates it, its only too short. Outside the fact that Captain Gregory is a bit hard of hearing, he's as sound as new timber. He's a product of Maine; and so Maine can lay claim to the discoverer of the hole in the doughnut, along with the discoverer of new ways to evade the prohibition laws. But Captain Gregory's discovery is of real use in the world; millions have risen, and more shall rise up, and call him blessed.

'Bout '47 Was the Date.
"It was way back—oh, I don't know just what year—let me see—born in '31, shipped when I was 13—well, I guess it was about '47, when I was 16, that I was aboard ship and discovered the hole which was later to revolutionize the doughnut industry."

"I first shipped aboard the Isaac Achorn, three-masted schooner, Capt. Rhodes, in the lime trade. Later I joined other crews and other captains, and it was on one of these cruises that I was making doughnuts."

"Now in them days we used to cut the doughnuts into diamond shapes and also into long strips bent in half and then twisted. I don't think we called them doughnuts then—they were just 'fried cakes' and 'twisters'."

"Well, sir, they used to fry all right around the edges, but when you had the edges done the insides were all raw dough. And the twisters used to sop up all the grease just where they bent and they were tough on digestion."

"Pretty d—d tough, too!" profanely agreed one of the dozen of pipe smokers who were all eyes and ears, taking in their comrade's review.

With a glance at the perfunctory interrupter, the discoverer continued: "Well, I says to myself, 'Why wouldn't a space inside solve the difficulty?' I thought at first I'd take one of the strips and roll it around. I got an inspiration, a great inspiration."

"I took the cover off the ship's tin pepper box, and I cut into the middle of that doughnut the first hole ever seen by mortal eyes!"

"Were you pleased?"

"Was Columbus pleased? Well, sir, them doughnuts was the finest I ever tasted. No more indigestion—no more greasy sinkers—but just well-done, fried-through doughnuts."

"That cruise over, I went home to my old mother and father in Camden, Me., where I was born. My father, Hanson Gregory, Sr., lived to be 93, and my mother lived to be 73. She was a pretty old lady then. I saw her making doughnuts in the kitchen—I can see her now, and as fine a woman as ever lived, was my mother."

Taught Trick to Mother.
"I says to her: 'Let me make some doughnuts for you.' She says all right, so I made her one or two and then showed her how."

She then made several painful and sent them to her mother just outside Camden. Everybody was delighted and they never made doughnuts any other way except the way I showed my mother."

"Well, I never took out a patent on it; I don't suppose any one can patent anything he discovers; I don't suppose Peary could patent the north pole or Columbus patent America. But I thought I'd get out a doughnut cutter—but somebody got in ahead of me."

Hole '40 Cut Out. His joke. "Of course a hole ain't so much; but it's the best part of the doughnut—you'd think so if you had ever tasted the doughnuts we used to eat in '31. Of course, lots of people joke about the hole in the doughnut. I've got a joke myself: Whenever anybody says to me: 'Where's the hole in the doughnut?' I always answer: 'It's been cut out!'" and the old chap laughed loud and long at his little sally, while the rest joined in.

So there he sits—in the Snug Harbor by the sea. And when there's doughnuts on the day's fare, Capt. Gregory takes a personal pride in trying to do what nobody's succeeded in doing yet—in trying to find the hole in the doughnut. And whenever the old salts rally about it, he always springs his little joke:

"The hole's been cut out, I guess!" to the delight of the whole shipful."

APPENDIX

Of a Young Woman of California Found by Doctors to Contain Pin.

REDDING, Calif., April 1.—Rushed to the hospital for an operation for acute appendicitis, Mrs. Robert Erskine, of Shasta, was found to have been carrying an ordinary pin in her appendix for ten years. The physician also found a worm in the appendix. The combination of the two had so irritated the organ that it was about to burst, and Mrs. Erskine narrowly missed death.

Mrs. Erskine, who is 20 years old, said that she remembered swallowing a pin when she was ten years old. The pin never caused her any pain until months ago when she began to suffer.